In the Claims

The following claim amendments conform to the agreement reached with the Examiner during an Interview (discussed further below) on March 25, 1999, and applicant requests that they be entered in the application.

Please cancel claims 1 - 59.

Claim 60 (Amended) An elastomer composite comprising elastomer in which particulate filler has been dispersed by:

feeding a continuous flow of first fluid comprising elastomer latex to a mixing zone of a coagulum reactor defining an elongate coagulum zone extending from the mixing zone to a discharge end;

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feeding a continuous flow of second fluid comprising particulate filler under pressure to the mixing zone of the coagulum reactor to form a mixture with the elastomer latex, the mixture passing as a continuous flow to the discharge end, and the particulate filler being effective to coagulate the elastomer latex, wherein mixing of the first fluid and the second fluid within the mixing zone is sufficiently energetic to substantially completely coagulate the elastomer latex with the particulate filler prior to the discharge end; and

discharging a substantially continuous flow of elastomer composite from the discharge end of the coagulum reactor, the macro-dispersion D(%) of the



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particulate filler in the elastomer composite being no more than 0.2% undispersed area.

Claim 61 (Amended) An elastomer composite comprising particulate filler finely dispersed in elastomer, formed by a continuous flow method comprising the steps of:

A) establishing a continuous, semi-confined flow of mixed elastomer latex and particulate filler under pressure in a coagulum reactor forming an elongate coagulum zone extending with progressively increasing cross-sectional area from an entry end to a discharge end, by simultaneously

(i) feeding elastomer latex fluid continuously to a mixing zone at the entry end of the coagulum reactor, and

(ii) entraining the elastomer latex fluid into particulate filler fluid by feeding the particulate filler fluid as a continuous jet into the mixing zone; and

B) discharging from the discharge end of the coagulum reactor a substantially constant flow of elastomer master batch globules concurrently with feeding of the fluid streams in accordance with steps A(i) and A(ii), the macro-dispersion D(%) of the particulate filler in the master batch being no more than 0.2% undispersed area.



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Claim 62 (Amended) An elastomer composite formed by a continuous flow method comprising the steps of:

A) establishing a continuous semi-confined flow of mixed natural rubber latex and carbon black in a coagulum reactor forming a generally tubular coagulum zone extending with progressively increasing cross-sectional area from an entry end to an open discharge end, by simultaneously

(i) feeding a liquid stream of the natural rubber latex continuously to a mixing zone at the entry end of the coagulum reactor, and

(ii) entraining the natural rubber latex continuously into a liquid slurry of the carbon black by feeding the liquid slurry as a continuous jet into the mixing zone; and

B) simultaneously discharging elastomer composite globules from the discharge end of the coagulum reactor, the macro-dispersion D(%) of the carbon black in the elastomer composite globules being no more than 0.2% undispersed area.

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Claim 63 (Amended) An elastomer composite formed by a continuous flow method comprising the following steps:

preparing a particulate filler fluid by high energy dispersion of the particulate filler into aqueous liquid in a homogenizer; and



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establishing a continuous, semi-confined flow of mixed natural rubber latex and particulate filler in a coagulum reactor forming a mixing zone and a generally tubular coagulum zone extending with progressively increasing cross-sectional area from the mixing zone to a discharge end by simultaneously

(i) feeding a liquid stream of the natural rubber latex at less than 10 feet per second continuously to a mixing zone defined by a mix head in sealed fluid communication with a coagulum zone extender, the mixing zone extending coaxially with the coagulum zone, and

(ii) entraining the natural rubber latex continuously into the particulate filler fluid by feeding the particulate filler fluid into the mixing zone through a feed tube substantially coaxial with the coagulum zone, the particulate filler fluid exiting the feed tube at a velocity of 200 to 500 feet per second;

simultaneously and continuously discharging from the discharge end of the coagulum reactor globules of the elastomer composite in which coagulation of the natural rubber latex by the particulate filler is substantially complete, the macro-dispersion D(%) of the particulate filler in the globules of the elastomer composite being no more than 0.2% undispersed area; and

simultaneously and continuously drying and pelletizing globules discharged from the coagulum reactor.

In claim 67, line 7 (that is, the last full line of claim 67), please delete "being" and insert in place thereof-- is --.

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53 Claim 112 (Amended) A vulcanizate comprising particulate filler finally dispersed in elastomer, having a crack growth rate measured in accordance with ASTM D3629-94 of no more than about 1.20 cm / million cycles and macro-dispersion D(%) of the particulate filler in the vulcanizate of no more than 0.2% undispersed area.

54 Claim 113 (Twice Amended) A method of producing elastomer composite, comprising:

feeding a flow of first fluid comprising elastomer latex to a mixing zone of a coagulum reactor defining an elongate coagulum zone extending from the mixing zone to a discharge end;

feeding a flow of second fluid comprising particulate filler under pressure to the mixing zone of the coagulum reactor to form a mixture with the elastomer latex, the mixture passing as a continuous flow to the discharge end and the particulate filler being effective to coagulate the elastomer latex, wherein mixing of the first fluid and the second fluid is fed to within the mixing zone is sufficiently energetic to substantially completely coagulate the elastomer latex with the particulate filler prior to the discharge end; and

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